February 9, 2012

Ms. Meredith Cross
Director
Division of Corporate Finance
Securities and Exchange Commission
100 F Street, NE Washington, DC 20549-4628

Re: Proposed Rule on "Disclosure of Payments by Resource Extraction Issuers," File No. S7-42-10

Dear Ms. Cross,

I am pleased to formally submit the following comments to the Securities and Exchange Commission pursuant to its proposed rules for Dodd-Frank Section 1504, "Disclosure of Payments by Resource Extraction Issuers," on behalf of my academic co-authors Paul Healy (Harvard Business School), George Serafeim (Harvard Business School), and myself (University of North Carolina at Chapel Hill).

A research project my colleagues and I recently completed examined the factors that influence the transparency of oil and gas companies in their foreign operations across the world. Our study analyzed the pressures (and thus, costs) that affect the level of transparency along two dimensions: (i) the level of transparency regarding payments made by a firm to host governments in the form of taxes, royalties, etc. and (ii) the level of transparency regarding the financial performance and operational details of the firm in a particular host country.

Utilizing 2007 and 2011 datasets from Transparency International, *we analyzed information on 32 major oil and gas producers operating in a total of 66 host countries, and found no evidence that disclosure of government payments is related to proprietary costs for companies.* To be precise, we found no evidence that the level of corruption or the degree of competition in a host country affected the level of transparency of government payments made by the firm. As a result, the argument that a firm may remain opaque regarding its government payments out of competitive concerns or in an effort to conceal corrupt activity by host officials is not supported by the empirical analysis. We do find evidence that competitive concerns affect transparency, but only related to the transparency of a firm's financial performance. We have attached our full research paper here, and hope it will be of use to the Commission.

We would be pleased to answer any questions about this analysis or to provide further information as needed.

Sincerely,

Venkat Kuppuswamy

Assistant Professor of Strategy and Entrepreneurship
Kenan-Flagler Business School
University of North Carolina at Chapel Hill

What Impedes Oil and Gas Companies' Transparency?

Paul Healy, Venkat Kuppuswamy and George Serafeim[*]

Abstract

We examine determinants of oil and gas companies' transparency in reporting on business activities in host countries where they operate. We find that our index of transparency across host countries is lower the more corrupt the host country, the higher the number of nationalizations in that host country in the past, and the fewer the number of oil and gas companies operating in the host country. The results of additional tests are consistent with the risk of expropriation being a barrier to information disclosure about firm performance. In contrast, we find no evidence that disclosure of government payments is related to proprietary costs. Moreover, holding the host country constant we find that firms coming from more corrupt home countries are less transparent about their government payment.

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1. Introduction

Prior research has argued that disclosure is costly if it reveals proprietary information to a firm's competitors or increases regulatory and litigation costs.[1] Yet there is relatively little empirical evidence on the importance of these costs in explaining firms' disclosure decisions (Beyer et al. 2011). We revisit this question by analyzing the determinants of multinational oil and gas companies' disclosures on their business activities in host countries. We examine three forms of disclosure costs that oil and gas managers could potentially consider: political costs of expropriation of host country assets by local governments, proprietary costs from reporting information that may be valuable to competitors, and legal and business costs from reporting information that could be used to detect corrupt activities.

The oil and gas industry is an ideal setting to examine the role of these factors in disclosure choices. First, in many of the countries where they operate, oil and gas companies have faced asset expropriations and corruption by foreign governments. Second, most oil and gas companies operate in multiple host countries, a feature that increases the power of our tests by allowing us to hold the firm constant and conduct our analysis across host countries. Finally, both the U.S. government and the European Union are currently considering new laws that would require oil and gas companies to disclose information about operations in host countries.[2]

We use corporate disclosure data for the years 2006 and 2010 provided by Transparency International, a leading anti-corruption non-governmental organization (NGO), to construct an annual transparency index for each firm-host country pair. The index measures the extent to which oil and gas companies disclose annual revenues, production costs, development and

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[1] See for example, among other papers, Verrecchia (1983), Wagenhofer (1990), Skinner (1994) and Arya, Frimor and Mittendorf (2009).

[2] See, for example, the G8 commitment to the action plan 'Fighting Corruption and Improving Transparency', in 2002; and http://blogs.wsj.com/corruption-currents/2011/05/27/g-8-presses-for-transparency-in-extractive-industries/

exploration costs, profit before taxes, profit taxes, royalties, production volumes, and reserves for their operations in each host country. Because oil and gas firms identify all host countries where they have material operations, each host country-firm pair in our sample represents a host country where the focal firm has significant operations.

Our tests examine whether oil and gas firm disclosures at the host country level are related to costs of disclosure caused by expropriation risk, legal and business risks associated with corruption, and competitive risks. By examining differences in a firm's disclosures within the same year across its host countries, we can control for endogenous country selection decisions and identify the effect of host country characteristics.

The findings indicate that there is wide variation in country-level disclosures even by the same firm within the same year. Cross-country disclosures are negatively related to country corruption ratings and past nationalizations of oil and gas companies in host countries, and positively related to the number of competitors operating in the country, suggesting that expropriation, legal costs from corruption detection, and competition costs all influence oil and gas firm transparency.

The Dodd-Frank Act that was signed into law in July 2010 requires all companies traded on U.S. stock exchanges to make public the payments they make to governments in exchange for natural resources, country-by-country and for each project (Section 1504). One of the claims against this new provision is that disclosing government payments will increase competition costs for companies, by revealing proprietary information.[3] We find no evidence in support of this claim. We find that competition costs are related only to disclosures about the operating performance of the company in the host country.

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[3] See for example: http://www.revenuewatch.org/publications/fact_sheets/costs-criticisms-facts-about-disclosure-rules.

However, interpreting the findings for expropriation and corruption risks is difficult. Past nationalizations is an imperfect proxy for expropriation risk since host countries with high corruption ratings are also likely to be countries with high expropriation risks. To provide additional evidence on the expropriation and corruption hypotheses, we separately examine ratings of firms' disclosures of operating performance and government payment measures. We argue that firms that weigh expropriation risk heavily in their disclosure decisions will avoid reporting performance metrics (profits, costs, volumes, and reserves) in high-risk countries, since host governments can use this information to rationalize additional taxes or nationalization. There will be no such concern about government payment disclosures, since governments already have such information. In contrast, firms that are concerned about legal risks from detection of corruption will avoid disclosing government payments, since such information can potentially be used to uncover corruption. The findings indicate stronger support for the expropriation than for the legal risk hypothesis. Both the host country corruption and the past nationalizations variables are related to performance disclosures but are unrelated to disclosures of government payments in the host country.

Additional tests that examine whether oil and gas firms' anti-corruption disclosures are related to host country transparency also point to expropriation risk being more important than corruption risk in explaining firms' disclosure decisions in host countries. If firms' disclosures of anti-corruption policies reflect their commitment to combating corruption, then the relation between transparency and host country corruption and nationalizations will be stronger for firms with weak anti-corruption policies if firms decrease disclosure to avoid legal risks. In contrast, the relation between transparency and host country corruption and nationalizations will be

stronger for firms with strong anti-corruption policies if firms decrease disclosure to decrease expropriation risks. We find evidence in support of this second mechanism.

Finally, we analyze the sources of within-host country variation in transparency choices. Specifically, we examine whether firms from more corrupt home countries are less transparent about their operations in a given host country. We do not find any relation between home country corruption and performance transparency, but we find that firms that come from more corrupt countries exhibit lower transparency around government payments. Moreover, we find that larger firms and private national oil companies disclose less information.

Our findings contribute to the literature in two ways. First, the cross-country relation between oil and gas disclosures and expropriation and competitive costs contributes to the voluntary disclosure literature (Healy and Palepu 2001; Verrecchia 2001). Second, the findings add to our understanding of the impact of host country corruption and government activity on firm behavior (Campos, Lien and Pradhan 1999; Cuervo-Cazurra 2006; Spencer and Gomez 2011).

The remainder of the paper is organized as follows. Section 2 provides a background to the oil and gas industry. Section 3 develops the hypotheses. Section 4 presents the sample, data sources and research tests. Section 5, 6 and 7 present the results and section 8 concludes.

2. The Oil and Gas Industry

The oil and gas industry is one of the largest in the world. The International Energy Agency has estimated that $3 trillion will be invested in the oil and gas sector globally over the next 25 years. While large, these investments amount to less than 6 percent of projected revenues during the same period (McPherson and MacSearraigh 2007), with annual gross revenues on crude oil sales estimated at $1.5 trillion per year. Assuming conservatively that a barrel of oil is

sold three times over the value chain, the actual volume of global oil market transactions is many times larger (International Energy Agency 2005).

There are a number of reasons that the industry is vulnerable to expropriation and corruption. First, because of its scale and supporting infrastructure, areas such as pipeline transport, terminating, and port facilities are dominated by monopolies or oligopolies that generate economic rents. The average price of a barrel of crude oil on international markets during 2006 ranged from $65-$75, while costs per barrel were $3–$5 in the Middle East, $12 in the Gulf of Mexico, and $15 in the North Sea (International Energy Agency 2005, p. 11). Margins therefore range from $50 to more than $70 a barrel, making oil and gas firms attractive targets for expropriation and corruption (see McPherson and MacSearraigh 2007).

Second, petroleum revenue flows to governments tend to be concentrated, coming from relatively few companies, mostly foreign rather than domestic. In addition, as we report later in the paper, a disproportionate number of oil and gas producing countries have weak institutions to protect against corruption. As a result, there is frequently limited public accountability by government agencies over the use of tax and royalty revenues (Robinson, Torvik, and Verdier 2006; Mehlum, Moene, and Torvik 2006). Individuals raising concerns over misuse of oil revenues can, therefore, be ignored, bought off or intimidated (Karl 1997; Moore 2004).

Third, the oil industry is technically and structurally complicated, with complex fiscal, legal, and commercial agreements governing revenue flows. This makes it relatively easy for government officials to manipulate revenue flows for political or personal gain to conceal their activities (McPherson and MacSearraigh 2007).

Finally, oil is critically important to the economies of many producing countries, which is used to justify wide-ranging government involvement in the sector (Yergin and Stanislaw 1998).

Government intervention ranges from ownership of resources through policy formulation and legislation, control of access to infrastructure, and regulation of operations to the establishment of national oil companies. Each of these areas of government involvement spawns significant opportunities for expropriation and corruption. These problems are exacerbated by consuming country governments that also view oil as strategically important, with concerns over the security of supply. These concerns often lead to engagement with producing-country governments to secure continuous supply, even if that means overlooking corruption and expropriation (McPherson and MacSearraigh 2007).[4]

There have been many efforts to combat corruption in the oil and gas industry but the main anti-corruption initiative has been the Extractive Industries Transparency Initiative (EITI). EITI monitors and reconciles company payments and government revenues at the country level. Consequently, the main focus of the EITI has been a country rather than a company. There are few specific requirements for individual companies to provide disaggregated disclosure for their operations in different countries[5]. Indeed, disaggregated reporting has been a contentious issue at the international level and in countries implementing the Initiative since its inception (Darby 2009). As a result, the EITI is officially neutral on the issue of disaggregation.

As of January 2011, 59 EITI country-level reports have been produced by 23 member nations since the initiative began in 2005 (EITI 2011). These reports cover more than US$400 billion in revenues generated by the extractives industry. While the EITI has typically focused on exerting pressure on governments, it does encourage companies to join the initiative as well. By

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[4] See for example "Oil Clouds West's Dealings with Africa Strongmen," Reuters, July 20, 2006; Ron Stodghill, "Oil, Cash and Corruption," New York Times, November 5, 2006; "With Friends Like These . . .," Washington Post, April 18, 2006; and Chris McGreal and Dan Galister, "The Tiny African State, the President's Son, and the $35 Million Malibu Mansion," The Guardian, November 6, 2006.

[5] In 2011, only 5 host countries in our sample have instituted an EITI policy to disclose disaggregated data on company payments: Central African Republic, the Democratic Republic of Congo, Mongolia, Nigeria, Norway, and Timor-Leste.

early 2011, more than 80 institutional investors (representing over US$16 trillion in assets under management) and over 50 companies have supported the EITI (EITI 2011). Companies also face pressure from the G-8, which is proposing legislation requiring publicly listed companies to disclose payments made to host governments (Wall Street Journal 2011). Nevertheless, only a handful of EITI compliant countries have disclosed disaggregated reports and oil and gas companies have considerable discretion in the level of disclosure on operations in host countries.

3. Hypotheses

Prior research indicates that firms that commit to disclosing information reduce information asymmetry and lower their cost of capital (Verrecchia 1983, 2001; Botosan 1997; Healy, Hutton and Palepu 1999; Leuz and Verrecchia 2000; Healy and Palepu 2001; Serafeim 2011). Disclosures of country-level operating variables by oil and gas firms provide potentially valuable information to investors for stock valuation and evaluating top management performance. They also potentially signal a company's commitment to combatting bribery, which as noted above is significant in many of the countries where oil and gas firms operate, protecting its reputation, facilitating business with non-corrupt governments, and even attracting talented employees who want to work for an ethical company. However, we also identify three costs to disclosure: political costs from asset expropriation by local governments, costs of losing business opportunities to companies that are opaque/legal costs from corruption oversight, and proprietary costs related to product market competition.

3.1 Expropriation Costs

Eaton and Gersovitz (1983) observe that firms in extractive industries are particularly prone to host government expropriations. Between 1962 and 2006, there were 98 separate incidences of governments expropriating assets of one or more oil and gas firms operating in

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their country (see Guriev, Loiotilin, and Sonin, 2009), and these do not include changes in tax regulations. Prior research in this area found that countries that were poorer, war-torn, with low quality institutions were more likely to nationalize (Jodice, 1980) and that oil and gas nationalizations were more prevalent when oil prices were high (Guriev, Loiotilin, and Sonin, 2009).

We predict that firms' disclosure in a given host country is negatively related to the risk of "resource nationalism". Governments often justify expropriations by arguing that certain foreign operators are not sharing profits equitably with the country and its citizens (Darby 2009). We predict that this will lead oil and gas firms at risk to disclose less information on profits and reserves to avoid attracting public attention. We therefore hypothesize that:

> *H1: Oil and gas firms operating in host countries with a high expropriation risk*
> *are less likely to disclose information about their performance.*

We are aware of no evidence on the types of firms likely to be targets for expropriation. Firms with high profits and reserves in a country would seem to be strong candidates. But since profitability and reserve data is not widely available by country, we cannot test this conjecture. Instead, we examine the relation between firm size and expropriation risk. Large firms have considerable political capital that could make them less likely to be targets for expropriation. Alternatively, as recently demonstrated in Venezuela, their sizable resources can make them attractive targets.[6] In addition, we predict that firms with strong anti-corruption systems are likely to be targets for expropriation since they are less likely to pay bribes to government officials. These firms are therefore likely to avoid disclosing information that could be used by host governments to justify nationalization. We therefore hypothesize that:

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[6] Venezuela targeted Exxon Mobil, Conoco Philips, and Chevron, three of the largest U.S. oil and gas firms, as well some of the largest European firms, such as Total S.A. from France, Statoil from Norway, and BP from the U.K.

H2: Large oil and gas firms operating in host countries with high expropriation risks disclose less information on host country performance than small firms.

H3: In high expropriation risk countries oil and gas firms with strong anti-corruption systems disclose less information on host country performance than firms with weak anti-corruption systems.

3.2 Legal and Business Costs Associated with Corruption

The difference between a firm's tax and royalty payments to host governments and the amounts they report as revenues, much of which is attributable to bribes, is more transparent when the firm publicly discloses government payments in the countries in which it operates. Companies that are transparent, therefore, face a higher risk that corrupt contracts they win will be detected by host or home country enforcement agencies, leading to costly legal actions. To ensure that their illicit practices remain secret, corrupt government officials in host countries are likely to award new contracts to firms that are opaque (Shleifer and Vishny, 1993). Corporate transparency therefore reduces the likelihood of generating new business in countries with corrupt governments, and if bribes are paid increases the risk of detection and the accompanying legal costs (Kolstad and Wiig, 2009). This leads to the following hypothesis:

H4: Oil and gas firms disclose less information on business operations, particularly on government payments, in host countries with high levels of corruption.

Healy and Serafeim (2011) observe that controlling for industry, home and host country risks, there is wide variation in multinationals' disclosures of anti-corruption practices, suggesting that there are significant differences among firms in their commitment to combatting corruption. These policy differences suggest that the legal and foregone business costs

associated with corruption are more likely to be associated with low payment disclosures for firms with weak anti-corruption practices:

H5: In host countries with high levels of corruption, oil and gas firms with weak anti-corruption standards disclose less information on government payments than firms with strong anti-corruption standards.

3.3 Competition Risk

Many studies have posited that firms avoid disclosing proprietary information (Verrecchia 1983; Darrough and Stoughton 1990; Wagenhofer 1990; Feltham and Xie 1992; Gigler 1994; Verreccchia 2001). Information about country costs of extraction and profitability for an oil and gas firm is often considered proprietary (Darby 2009). Firms' competitive advantage is derived from the ability to pay as little as possible for raw inputs and to extract/refine/transport products as cheaply and efficiently as possible. Consequently, companies are sensitive about how much information to disclose about their operational costs, payments for extraction rights, and the profitability of individual projects. Geological data, such as the size of the reserves, are also considered confidential in the industry. In countries where there is little publicly available information about the size and structure of reserves, a company that has already invested in determining the size and structure of those reserves has a competitive advantage over other companies seeking to do business in the same or neighboring areas.

The competitive cost of disclosure is particularly severe in countries where only a few companies are operating. In these situations there can be large information gaps between companies about the costs of production and exploration, and about profitability. To ensure that the rents to this information are extracted for as long as possible, firms operating in the host

country are expected to provide limited disclosure, particularly regarding their cost structure and financial performance. As a result, we hypothesize that:

> *H6: Oil and gas firms disclose less information on their operations, especially about their performance, in host countries where there are few other operators.*

4. Sample, Data and Tests

4.1 Sample

The data for this study come from Transparency International (TI). TI conducted two studies, in 2007 and 2011, about the transparency of oil and gas companies in the host countries where they operate. In 2011, TI collected data on 44 major oil and gas producers (20 international and 24 national oil companies) based in 30 home countries and that operated in 73 host countries.[7] The sample firms accounted for 60 per cent of global oil and 55 per cent of global natural gas reserves. The 2007 sample included the 33 largest producers (Fortune Global 500 and/or Forbes Global 2000) plus 11 locally important national oil companies, mostly from oil-dependent countries. For reasons described below, we restrict our analysis to the foreign operations of our oil and gas producers i.e., we exclude transparency choices regarding operations in a firm's home country. Our final sample comprises 32 firms that operate in 66 host nations, and that generate 461 firm-host country-year observations.

4.2 Variables

Transparency Variables: The primary dependent variable used in the tests is a transparency index (*Transparency*) calculated for each company-host country-year by summing eight indicator variables that take the value of one if for a given host country and year the company

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[7] The 2007 sample is smaller as Transparency International focused on collecting data for 43 companies (23 national oil companies) and their operations in 21 major oil exporting countries.

discloses: (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. The maximum transparency score that a company could receive for a given host country/year is therefore eight and the minimum zero. As reported in Table 1, the average *Transparency* score across all host countries and years is 1.67, indicating that firms in the industry typically provide limited disclosure of host country operations. On average, 15% of the sample firms report revenue disclosures, versus 7% for production costs, 9% for development and exploration costs, 7% for profit before taxes, 14% for profit taxes, 9% for royalties, 81% for production volumes, and 26% for reserves.

We separate *Transparency* into two components – *Payment Transparency* and *Performance Transparency*. *Payment Transparency* measures a firm's transparency regarding payments made to the local host government, and is the sum of the indicators for disclosure of profit taxes and royalties paid to the host government. *Performance Transparency* measures transparency about a firm's financial performance and operations in a host nation and is the sum of indicators for disclosure of revenues, production costs, development and exploration costs, profit before taxes, production volumes, and reserves. Oil and gas companies provide limited disclosure of either type of information. The average *Payment Transparency* score is 0.23 indicating that on average firms report only 11.5% of the maximum government payment disclosures, versus 1.44 (24%) for the *Performance Transparency* score.

Expropriation Risk Variable: To proxy for expropriation risk we construct *Host Country Nationalizations*, which represents the number of times the host country's government has nationalized the local operations of oil and gas companies through the end of 2006. The data for this variable comes from Guriev, Loiotilin, and Sonin (2009). As reported in Table 1, the mean

(median) *Host Country Nationalizations* is 1.76 (1.00), suggesting that throughout the industry's history nationalizations have not been unusual in oil rich countries.

Competitive Risk Variable: Our proxy for competitive risks is the logarithm of the number of oil and gas companies operating in a host country, *Host Country Number of Firms.* As reported in table 1, on average eight firms operate in a country. Substantial variation exists with six firms operating in a host country for a firm-host country pair in the first quartile and sixteen firms operating in a host country for a firm-host country pair in the third quartile.

Corruption Risk Variables: We use a variety of country and firm variables to capture the legal and business risks associated with corruption.

Host/Home Country Corruption is the Transparency International corruption perception index, a widely used index of country-level corruption, for the host/home nation measured one year before the disclosure year. The index ranges from zero to ten, with higher values representing less corruption. We invert the index by taking the difference between ten and the index so that larger values indicate greater corruption. As reported in Table 1, the average *Host Country Corruption* is 6.10 versus 3.44 for the average home country, confirming prior observations that oil and gas companies tend to operate in countries with relatively high levels of corruption.

Host/Home Country Enforcement is the average number of prosecutions against corruption in each host/home country for the two years[8] prior to the disclosure year. To control for the size of each economy we normalize this measure by the country's share of world exports. Table 1 shows that average home country enforcement is higher than that for host countries.

Firm FCPA is a dummy variable that takes the value one if the sample firm was fined for violating the U.S. Foreign Corrupt Practices Act (FCPA) in the past and zero otherwise. As

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[8] We used the last two years because most recent enforcement activity is a stronger indicator predictor of active enforcement. Using data for more years leaves all results qualitatively unchanged.

reported in table 1, nineteen percent of the observations are related to firms that were fined for FCPA violations.

Firm Anti-Corruption Measures is a proxy for firm anti-corruption practices and is constructed from a Transparency International rating of firm disclosures in annual reports, sustainability reports and corporate web sites on 16 questions that reflect its stated policies regarding corruption.[9] Healy and Serafeim (2011) show that the magnitude of disclosure around anti-corruption efforts is related to costly enforcement mechanisms and as a result represents a credible commitment to avoid corrupt activities rather than cheap talk. On average, *Firm Anti-Corruption Measures* is 12.22 suggesting that firms are much more transparent about their anti-corruption systems compared to their operations in host countries.

Firm-level Variables: Firm-level variables include the natural logarithm of firm revenues (*Firm Size*), and ownership. Average firm revenues (shown in table 1) are $84 billion suggesting that the firms in our sample are very large. In terms of ownership, 26% are national oil companies and 74% are international oil companies. Of the national oil companies, 15% are national oil companies (*NOC*) that are completely controlled by the government, 50% are national oil companies that are listed in a stock exchange (*LNOC*), and 35% are national oil companies with a subsidiary listed in a stock exchange (*SUBLNOC*).

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[9] The 16 questions used to construct the *Anti-Corruption Measures* variable are: Does the company have a publicly available global policy of zero tolerance of corruption? Does the company have a statement of support for the UN Convention against Corruption? Does the company have a policy to forbid or fully disclose political contributions? Does the company provide guidance on the offer or receipt of gifts, hospitality or expenses? Does the policy apply to agents and other intermediaries? Does the policy apply to contractors, subcontractors and suppliers? Does the policy apply to other business partnerships? Does the company provide anti-corruption training for all employees? Does the policy explicitly apply to all employees? Does the policy prohibit retaliation for reporting violation of policy? Does the policy include provisions for disciplining employees (including directors and managers) involved in corrupt activities? Does the company provide channels through which employees can report potential violations of policy or seek advice (e.g. whistle-blowing) in confidence? Does the company disclose the number of complaints received or incidents reported for corrupt activities through the communication channels? Does the company support the EITI? Is the company's anti-corruption program periodically reviewed for adequacy and effectiveness?

Table 2 presents univariate correlations between the dependent and independent variables. These indicate that *Transparency* is lower in more corrupt countries, and higher in countries with stronger enforcement and in countries where more companies operate. *Payment Transparency* and *Performance Transparency* are positively correlated (0.45), but the magnitude of the correlation suggests that the two constructs are not highly collinear. *Performance Transparency* exhibits stronger correlations with *Host Country Corruption* and *Host Country Nationalizations* than *Payment Transparency*.

4.3 Tests

Our tests examine the relation between oil and gas firm transparency in a given host country and year, and measures of expropriation, competitiveness, and corruption risk. The unit of analysis is a firm-host country-year observation. We model firms' transparency choices (*Transparency*, *Payment Transparency*, and *Performance Transparency*) as a function of variables representing expropriation risks (*Host Country Nationalizations*), competitive risks (*Host Country Number of Firms*), and legal risks from corruption (*Host Country Corruption* and *Host Country Enforcement*).

Since the level of corruption in a host country and the number of past nationalizations that have taken place there may both proxy for the propensity of host governments to expropriate firm assets (*Host Country Corruption* and *Host Country Nationalizations* are correlated at the 0.31 level), we present models for each of these covariates separately, and a full model with them included together. Given the use of count data to define the dependent variable and the variable's skewness, we use a Negative Binomial specification (Wooldridge 2002). However, when Negative Binomial estimates are unavailable, we present the results of a Poisson specification. For robustness, we also report the results of the OLS analysis.

To control for firm-specific factors that were present during a given year, our tests include firm-year fixed effects. While this significantly reduces the degrees of freedom in our analysis, it allows us to precisely identify the sources of within-firm variation in transparency choices across host locations[10]. Moreover, firm-year fixed effects help alleviate endogeneity concerns. For example, more transparent firms may avoid countries with high corruption risk. But firm-year fixed effects enable us to examine differences in transparency across operating regions for the same firm within the same year. By restricting our analysis to a within-firm and year context, we sidestep such selection issues.

5. Results

5.1 Total Transparency Results

The results of the analysis of within-firm variation in overall *Transparency* are reported in Table 3 for both the Negative Binomial and OLS specifications. But we confine our discussion to the results of the Negative Binomial models (1, 3 and 5). As noted earlier, we present models where *Host Country Corruption* and *Host Country Nationalizations* are separately included as covariates (Models (1) and (3) respectively), and a full model where they are included together (Model (5)).

For Model (1), the estimate for *Host Country Corruption* is negative and statistically significantly at the 1% level and the *Host Country Number of Firms* estimate is positive and significant at the 5% level. For model (3), which includes *Host Country Nationalizations* rather than *Host Country Corruption* in the empirical specification, the *Host Country Nationalizations*

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[10] Although industry participants have frequently claimed that companies do not disclose country specific information because of laws in host country that prohibit such disclosure, a study by Columbia Law School that examined laws in over 100 countries, found that none of the laws prohibit disclosure of revenue payments and profits. See: http://www.revenuewatch.org/files/RWI-Contracts-Confidential.pdf. Moreover, even in countries where governments have traditionally been hostile to disclosure, such as in Angola, companies that operate in the country, such as Statoil Hydro, have disclosed their revenue payments.

estimate is negative and significant at the 5% level, and the estimate for *Host Country Number of Firms* is positive and significant. Finally, in model (5), which includes both the *Host Country Nationalizations* and the *Host Country Corruption* variables, the *Host Country Number of Firms* estimate continues to be positive and significant, but the estimates for *Host Country Nationalizations* and *Host Country Corruption* are now only weakly significant (at the 10% level).

Estimates for all three models indicate that competitive risks are an important factor underlying differences in oil and gas firms' disclosure ratings across the host countries in which they operate. The positive and significant coefficient of *Host Country Number of Firms* implies that the number of firms operating in a host country increases the transparency of the focal firm. Interpreting the coefficient of *Host Country Number of Firms* from Models (1) and (3), we find by calculating the incidence rate ratios that a one standard deviation increase in the number of firms operating in a host country increases the transparency rate by 14.5% and 18.3% respectively. This is consistent with firms reducing their country-level disclosures when there are relatively few firms operating in a host country as a way to limit information on operating performance in the market to potential entrants.

It is more difficult to interpret the findings for the *Host Country Nationalizations* and *Host Country Corruption* variables. Both are highly significant when considered alone in Models (1) and (3), but, as Model (5) indicates, when both are included together their significance diminishes, suggesting that it is difficult for our tests to disentangle the two effects. Given corrupt governments are also likely to have no qualms about expropriating foreign company assets, this may not be too surprising. Follow-up tests discussed below provide further evidence on these hypotheses.

Finally, none of the model estimates for the *Host Country Enforcement* variable is significant.[11] One explanation is that enforcement has conflicting effects on transparency. Active enforcement can deter firms from paying bribes to host officials, reducing corruption and making disclosure less costly. As a result, higher host country enforcement is expected to result in greater transparency. However, active enforcement also increases the probability of detection for firms that bribe host officials, leading such firms to be more opaque to reduce the risk of prosecution. This effect could induce a negative relation between transparency and host country enforcement.

5.2 Payment and Performance Transparency Results

To further explore the expropriation and corruption hypotheses, we use *Payment Transparency* and *Performance Transparency* as dependent variables. As noted earlier, payment transparency measures firm disclosures about payments made to host governments (in the form of profit taxes and royalties), whereas performance transparency measures the extent to which the firm discloses details regarding its operating performance (reserves, revenues, cost structure, etc.). Payment transparency is unlikely to be associated with expropriation risk, since host governments have data on the payments they receive from oil and gas companies. What they typically lack is information on performance, which will provide an indication of the rents firms generate from their country's resources, and could be used to justify nationalization. The expropriation hypothesis, therefore, predicts measures of expropriation risk will be positively associated with performance transparency but not with payment transparency.

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[11] These results are unchanged when we include as a control an indicator variable that takes the value of one for six host countries in our sample that publish disaggregated data at the company level in their EITI report.

In contrast, information on a firm's tax and royalty payments to host governments can be used (in conjunction with the amounts they report as revenues) to help detect whether bribes were paid to host government officials. Information on firm performance in a host country provides no such benefit. The corruption risk hypothesis therefore predicts that measures of corruption risk will be positively associated with payment transparency but not with performance transparency.

Table 4 presents the model estimates using *Payment Transparency* as the dependent variable. The estimated coefficients for *Host Country Corruption* and *Host Country Enforcement* are insignificant, suggesting that there is no strong evidence that *Payment Transparency* is related to corruption risks. Results using *Performance Transparency* as the dependent variable, reported in Table 5, show a negative relation between performance transparency and *Host Country Corruption* in Model (1) and *Host Country Nationalizations* in Model (3), each significant at the 1% level. Further, when both variables are included in the analysis in Model (5), the estimates continue to be individually significant (at the 5% level). The coefficients on *Host Country Corruption* and *Host Country Nationalizations* are significantly more negative, at the 5% level, when the dependent variable is *Performance Transparency* instead of *Payment Transparency*. In economic terms, the coefficients from Model (5) indicate that a one standard deviation increase in the perceptual measure of host country corruption results in a 9.0% decrease in performance transparency rate exhibited by a firm. Moreover, a one standard deviation increase in nationalizations undertaken by a host government in the past decreases a firm's rate of performance transparency by 7.2%.

Oil and gas firms are therefore less transparent about details of their operating performance in host countries with high corruption ratings and a history of nationalizing oil and

gas firms. In contrast, disclosures of payments to host country governments are unrelated to any of the corruption and expropriation risk variables. This evidence is consistent with the expropriation hypothesis. It suggests that firms respond to concerns about risks of asset expropriations by host governments, which are likely to be higher in countries with high levels of corruption and prior records of nationalization, by disclosing less information on their country performance. Performance opacity presumably reduces information available to host governments to justify nationalization. The findings are inconsistent with the corruption risk hypothesis, which predicts that payment disclosures will be related to corruption risk.

Table 5 also provides further support for the competition risk hypothesis. In all models, we observe that *Host Country Number of Firms* has a positive and significant effect on *Performance Transparency*. Firms are therefore less transparent about their operating performance in host counties where they have fewer competitors. This indicates that in countries where they have fewer competitors, oil and gas firms manage competitive risks by disclosing fewer operational details on reserves and the cost structure of operations, information which is likely to be valuable to potential entrants.

5.3 Impact of Firm Anti-Corruption and Size

Our final analysis of within-firm determinants of transparency choices separately examines disclosures for sample firms with high and low anti-corruption practices (Table 6) and for large and small firms (Table 7).

Prior evidence indicates that anti-corruption disclosures are associated with actual disclosure risk and monitoring, indicating that they reflect real efforts and commitment by firms to avoid bribery and corrupt activities (Healy and Serafeim 2011). If such is the case, then under the corruption risk hypothesis, the negative relation between *Transparency* and *Host Country*

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Corruption is expected to be stronger for firms with low anti-corruption efforts. Such firms are likely to have low transparency on host country activities in efforts to reduce detection of corruption and to protect corrupt business. In contrast, under the expropriation hypothesis, firms with high anti-corruption disclosures are expected to have a stronger relation between *Transparency*, *Host Country Corruption*, and *Host Country Nationalizations.* Such firms are less likely to pay bribes and are therefore attractive targets for expropriation by corrupt governments. One way these firms can manage this risk is by disclosing little information that could be used by corrupt government officials to rationalize their nationalization.

The results, reported in Table 6, are more consistent with the expropriation hypothesis. *Host Country Corruption* and *Host Country Nationalizations* estimates for firms with above median anti-corruption practices (reported in Panel A) are negative and significant in models where each variable is analyzed separately (Models (1), (2), (7), and (8)) and in models that include both variables (Models (3) and (9)). In contrast, estimates for the same variables are insignificant for firms with below median anti-corruption efforts (reported in Panel B). In the specifications where *Performance Transparency* is the dependent variable, the coefficients on *Host Country Corruption* are not statistically different across low and high anti-corruption efforts firms. However, the coefficients on *Host Country Nationalization* are statistically different at the 10% level. Firms with strong anti-corruption disclosures are therefore less likely to disclose host country performance, particularly operational performance, in countries with high levels of corruption and prior nationalizations. Given their anti-corruption policies, these firms are less likely to pay bribes to corrupt government officials and more vulnerable to "punitive nationalization" than firms with weak disclosures and policies, consistent with their decision to disclose less information that could be used to rationalize their nationalization.

We also separate firms into subsamples based on size. As discussed earlier, it is unclear whether larger firms are more or less attractive nationalization targets. To examine this question, we estimated the models for firms that are larger and smaller than the median firm. The results, presented in Table 7, do not show clear evidence of differences in expropriation risk for larger or smaller firms. Estimates for the effects of *Host Country Corruption* on both *Transparency* and *Performance Transparency* are significant in the above median size subsample but not for the below median subsample. But the *Host Country Nationalizations* estimates are negative and statistically significant in all models. As a result, it is not clear whether larger firms face more significant expropriation risk.

5.4 Transparency of Firms Operating in the Same Host Country

The above analysis demonstrates that host country factors influence transparency choices within the same firm. But it remains an open question whether firms operating in the same host country exhibit different transparency choice and if so, what are the determinants of these differences. Host country factors, such as the level of corruption, expropriation, or competitive risks cannot explain differences in firm decisions within the same country since all firms face the same host country risks. We therefore focus on home country and firm factors, particularly those that are likely to lead to differences in the legal costs associated with corruption, providing further evidence on whether corruption risk explains oil and gas transparency.

Prior research has shown that the foreign subsidiaries of multinational firms face institutional pressures to conform to the practices and standards of their country of origin (Spencer and Gomez 2011; Kogut 1993). The level of corruption and the level of corruption enforcement in firms' home countries may therefore explain differences in their transparency in

a given host country. Differences in firms' enforcement experiences and policies could also explain differences in their transparency within a host country. For example, firms that have faced home country enforcement actions in the past and firms with strong commitments to clean business, reflected in disclosures of strong anti-corruption policies and practices, may be particularly careful to avoid corrupt business in a host country, influencing their transparency (Healy and Serafeim 2011).

Other firm characteristics, such as size and ownership status (i.e., private vs. public ownership) have been shown to affect transparency choices more generally (Lang and Lundholm 1993, 1996; Miller 2002). Specifically, larger publicly listed firms have been found to exhibit greater transparency in their financial reports. As a result, these factors may influence the transparency of firms operating in the same host country.

To investigate differences in transparency between firms operating in the same host country, we again employ count-based Negative Binomial models, but with host-year fixed effects rather than firm-year fixed effects. Holding the host-year pair constant, we can analyze the sources of within-host variation in *Transparency* (as well as *Payment Transparency* and *Performance Transparency*). Independent variables include *Home Country Corruption* and *Home Country Enforcement*, past enforcement against the firm for corrupt behavior (*Firm FCPA*), disclosures of anti-corruption policies and practices (*Anti-Corruption Measures*), *Firm Size* (calculated as the logarithm of approximate revenues and then assigned into quintiles), and controls for the type of firm ownership (*NOC*, *LNOC*, *SUBLNOC*), where *NOC* is an indicator variable for national oil companies that are wholly owned by the government; *LNOC* is an indicator for nationally controlled and owned oil companies where a proportion of the shares of

the company is traded on a stock exchange; and *SUBLNOC* is an indicator for national oil companies with a subsidiary listed on a stock exchange.

Results are presented in Table 8. Consistent with the earlier evidence in the paper, we find little evidence that corruption risk is related to firm transparency. Neither the *Home Country Corruption* nor *Home Country Enforcement* estimates are significant. In addition, past enforcement action against the firm regarding corruption and firm disclosures on anti-corruption policies have no significant effect on transparency. Our evidence is therefore inconsistent with institutional forces from a firm's home environment driving behavior across its foreign segments, as highlighted by recent empirical and theoretical work on multinational corporations (Spencer and Gomez, 2011; Kogut, 1993).

However, we do find that several of the control variables explain differences in firm transparency within a host country. The estimate for *SUBLNOC* is negative and significant (at the 1% level), indicating that national oil companies with a subsidiary listed on a stock exchange are less transparency than international oil companies that are not controlled by a government. However, we find no differences between the transparency of LNOCs, NOCs, and non-government controlled oil companies. Thus, we provide some albeit limited support for popular claims that government controlled oil companies are particularly opaque about their foreign operations.

In contrast to prior evidence (Lang and Lundholm 1993), we find that *Firm Size* is negatively associated with *Transparency* within the same host country – the coefficients on the indicator variables for the fourth and fifth quintiles of size are significant at the 1% level. One explanation is that the sample oil and gas companies are so large and powerful that they can more effectively withstand public pressure to improve transparency and, since they are not

capital constrained, are not concerned about the capital market benefits offered by more transparency. Alternatively, larger firms face a higher risk of expropriation and as a result are more risk averse about host country disclosure.

Table 9 presents within-host analyses using *Payment Transparency* and *Performance Transparency* variables. The Payment Transparency results are consistent with country anti-corruption standards influencing differences in company disclosures in a host country. The estimate for *Home Country Corruption* is negative and significant at the 5% level, implying that firms from more corrupt countries make fewer disclosures on payments to host governments. However, the weakly significant negative estimate for *Home Country Enforcement* implies that firms from higher enforcement countries are less transparent on government payments, which is inconsistent with the theory. Also, estimates for variables representing past FCPA enforcement actions and anti-corruption disclosures are insignificant.

Consistent with the findings for total transparency, firm size is negatively related to both payment and performance transparency. The negative SUBLNOC estimate on *Transparency* appears to be driven by a significant negative estimate in the *Performance Transparency* model; the *Payment Transparency* estimate is insignificant. The transparency partitions also indicate that wholly owned national oil companies (NOCs) are less transparent about government payments than non-government controlled companies.

In summary, analysis of differences in disclosures for firms operating in the same host country confirm that there is little evidence that corruption risks temper firms' transparency.

5.5 Home Country Transparency

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As we discussed above in our primary analysis we did not include home country transparency, because firms tend to disclose substantially more information about their home countries relative to the host countries they are operating in. Such differences might not be captured by including an indicator variable for home country reports and as a result we analyze home country transparency levels separately. The analysis is similar to that reported in section 5.4, except that the unit of analysis is a firm- home country- year observation and for the variables representing home country factors rather than those for host countries. We include one additional control, *Only Home Report*, which is a dummy variable that takes the value one if a firms has oil and gas operations solely in its home country (e.g., Saudi Aramco, which operates only in Saudi Arabia), and zero otherwise.

The results are presented in Table 10. As before, we focus on the estimates of the negative binomial specification. The estimates for *Firm FCPA* and *Anti-Corruption Measures* are positive and significant, indicating that firms convicted of past corruption and firms that disclose anti-corruption policies and practices tend to be more transparent in their home countries. However, the positive and significant estimate for *Home Country Corruption* implies that firms are somewhat more transparent about home country operations if the home country is more corrupt. This finding is curious, but we interpret it with caution as the relation is only weakly significant and the size of the sample is quite small. Overall, these findings indicate that firm experience and policies influence transparency in a firm's home market, and that concern about corruption risk tends to dampen disclosure.

Two of the ownership variables are related to home country disclosures. The *Only Home Operation* estimate is positive and significant at the 5% level, indicating that firms operating solely in their home environment tend to exhibit more transparency in their home reports

compared to firms that operate in multiple countries. This is not surprising, since firms operating in a single home country are likely to provide some form of consolidated report that represents home country performance. In contrast, firms operating in multiple countries report aggregated results making it difficult to separate home country effects without comprehensive geographic segment disclosures. We believe that the transparency of government owned firms is better represented by the NOC estimate, which is negative and significant, implying that oil companies that are wholly owned by the home government tend to be more opaque regarding their home operations than international oil companies that are not government owned.

6. Conclusion

In this paper we use corporate disclosure data to construct an annual transparency index for each firm-host country pair. The index measures the extent to which the company discloses its annual revenues, production costs, development and exploration costs, profit before taxes, profit taxes, royalties, production volumes, and reserves for its oil and gas operations in each host country.

Our tests examine whether oil and gas firm disclosures at the host country level are related to proprietary costs of disclosure caused by expropriation risk, risk of detection of corruption, and risk of competition. The findings indicate that there is wide variation in country-level disclosures, even by the same firm within the same year. Cross-country disclosures are negatively related to country corruption ratings and to past nationalization frequency and positively related to the number of competitors operating in a given country. These findings are consistent with expropriation, corruption and competitive costs all working to dampen oil and gas firms' transparency about host country operations.

However, because corruption and expropriation risks increase with host country corruption ratings, we conduct additional tests to distinguish which is more important in shaping corporate disclosure. The evidence is remarkably consistent with the expropriation risk hypothesis. Both host country corruption and the number of nationalizations are related to performance disclosures, that could be used to rationalize nationalization, and are unrelated to transparency about government payments, which could be useful to detect corruption. The transparency findings are stronger for the subsample of firms with strong anti-corruption systems, that are susceptible to expropriation risk, and insignificant for firms with weak anti-corruption disclosures, that are likely to be vulnerable to corruption investigations.

In supplemental analyses of factors that explain differences in firm disclosures within a given country we find evidence that firms from more corrupt home countries are less likely to disclose government payments in a host country. In their home countries, firms convicted of past corruption and firms that disclose anti-corruption policies and practices tend to be more transparent. But the other corruption variables are insignificant, and some are actually inconsistent with the theory.

These results are particularly interesting in light of recent regulatory proposals to increase the disclosure requirements for oil and gas companies. Our evidence suggests that requiring disclosure of payments to foreign governments is unlikely to increase proprietary costs for oil and gas companies. But mandating disclosures about the performance of oil and gas companies in host countries is likely to increase proprietary costs, particularly risk of expropriations and costs related to product market competition.

We acknowledge that our study is but an early effort to examine the costs of disclosure in the oil and gas industry. Our findings and the regulatory interest in disclosures of oil and gas

firms point to a number of interesting questions for future research. These include questions about the effect of mandatory disclosure of government payments on host country corruption, whether mandatory disclosures affect the competitive landscape of the industry, and whether oil and gas companies that disclose their performance in host countries are more likely to be expropriated.

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Table 1
Summary Statistics

The table presents summary statistics of data used in subsequent tables. *Host/Home Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the host/home country. We invert the index by taking the difference between ten (its maximum value) and the index. *Host/Home Country Enforcement* is the average number of prosecutions for corruption in the host/home country in the two years before the year of disclosure deflated by the country's share of world exports. *Host Country Number of Firms* is the natural logarithm of the number of oil and gas companies operating in a host country. *Host Country Nationalizations* is the number of times the host country's government has nationalized the local operations of an oil and gas company in the past, as recorded by Guriev, Loiotilin, and Sonin (2009). *Transparency* is calculated by summing eight indicator variables, each taking the value one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. *Payment Transparency* is the sum of two indicator variables that measure whether a firm discloses (i) profit taxes and (ii) royalty payments made to the government in a specific host country. *Performance Transparency* is the sum of six indicators variables that take the value of one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) production volumes, and (vi) reserves, respectively. *Firm FCPA* is an indicator for whether a firm has been fined for violating the U.S. Foreign Corrupt Practices Act (FCPA). *Firm Size* is the natural logarithm of total revenues and *Firm ROA* is net income deflated by beginning assets. *Anti-corruption Measures* is an index constructed from 16 measures (see footnote 5), reflecting the transparency of a firm about its anti-corruption systems. *NOC*, *LNOC*, and *SUBLNOC* are indicators for whether the firm is a national oil company that is completely controlled by the government, a national oil company that is listed in a stock exchange, or a national oil company with a subsidiary listed in a stock exchange, respectively.

	Mean	Median	St. Dev	Q1	Q3
Host country characteristics					
Host Country Corruption	6.10	7.10	2.31	5.60	7.70
Host Country Enforcement	0.03	0.00	0.18	0.00	0.00
Host Country Number of Firms	2.14	2.40	0.67	1.79	2.71
Host Country Nationalizations	1.76	1.00	2.43	0.00	3.00
Home country characteristics					
Home Country Corruption	3.44	2.90	1.91	2.20	5.50
Home Country Enforcement	0.17	0.00	0.38	0.00	0.00
Firm Characteristics					
Transparency	1.67	1.00	1.74	1.00	2.00
Firm FCPA	0.19	0.00	0.39	0.00	0.00
Firm Size	11.34	11.69	1.14	10.82	12.07
Anti-Corruption Measures	12.22	13.50	5.24	11.50	16.00
NOC	0.04	0.00	0.20	0.00	0.00
LOC	0.13	0.00	0.34	0.00	0.00
SUBLNOC	0.09	0.00	0.29	0.00	0.00

Table 2
Correlation Matrix

The table presents pairwise correlations for key variables used in the subsequent analysis. Our main dependent variable, *Transparency* is calculated by summing eight indicator variables, each taking the value one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. *Payment Transparency* is the sum of two indicator variables that measure whether a firm discloses (i) profit taxes and (ii) royalty payments made to the government in a specific host country. *Performance Transparency* is the sum of six indicators variables that take the value of one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) production volumes, and (vi) reserves, respectively. *Host Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the host country. We invert the index by taking the difference between ten (its maximum value) and the index. *Host Country Enforcement* is measured by the average number of prosecutions for corruption in the host country in two years before the year of disclosure, normalize by the share each country has of world exports. *Host Country Number of Firms* is the natural logarithm of the number of oil and gas companies operating in the host country. *Host Country Nationalizations* is the number of times the host country's government has nationalized the local operations of oil and gas companies in the past, as recorded by Guriev, Loiotilin, and Sonin (2009).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Transparency	1.00						
(2) Payment Transparency	0.70	1.00					
(3) Performance Transparency	0.95	0.45	1.00				
(4) Host Country Corruption	-0.22	-0.11	-0.23	1.00			
(5) Host Country Enforcement	0.21	0.05	0.24	-0.28	1.00		
(6) Host Country Number of Firms	0.28	0.15	0.29	-0.20	0.15	1.00	
(7) Host Country Nationalizations	-0.05	0.00	-0.07	0.31	-0.13	0.12	1.00

Table 3
Relation between Transparency and Host Country Environment

The table presents the results of a within-firm analysis of a firm's transparency choices across its host nations using Negative Binomial models and OLS. To identify the sources of within-firm variation in transparency choices, the models in this table include firm-year fixed-effects. The dependent variable, *Transparency*, is calculated by summing eight indicator variables, each taking the value one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. *Host Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the host country. We invert the index by taking the difference between ten (its maximum value) and the index. *Host Country Enforcement* is measured by the average number of prosecutions for corruption in the host country in two years before the year of disclosure, normalize by the share each country has of world exports. *Host Country Number of Firms* is the natural logarithm of the number of oil and gas companies operating in the host country. *Host Country Nationalizations* is the number of times the host country's government has nationalized the local operations of oil and gas companies in the past, as recorded by Guriev, Loiotilin, and Sonin (2009).Robust standard errors, adjusted for clustering within firms, are in parentheses. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level).

	Transparency					
	Negative Binomial	OLS	Negative Binomial	OLS	Negative Binomial	OLS
	(1)	(2)	(3)	(4)	(5)	(6)
Host Country Corruption	-0.0434**	-0.0817**			-0.0321+	-0.0631*
	(0.0152)	(0.0289)			(0.0168)	(0.0293)
Host Country Enforcement	0.0751	0.462	0.0811	0.527	0.0170	0.350
	(0.166)	(0.535)	(0.153)	(0.480)	(0.153)	(0.503)
Host Country Number of Firms	0.196*	0.257*	0.241**	0.330*	0.208*	0.284*
	(0.0841)	(0.123)	(0.0817)	(0.126)	(0.0846)	(0.126)
Host Country Nationalizations			-0.0377**	-0.0712**	-0.0258+	-0.0524*
			(0.0134)	(0.0248)	(0.0137)	(0.0243)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.0433	1.126**	-0.403**	0.495*	-0.123	1.000**
	(0.185)	(0.268)	(0.149)	(0.206)	(0.204)	(0.287)
Alpha	5.77E-08		4.14E-08		3.22E-08	
N	461	461		461	461	461
Adjusted R-Sq		0.533		0.532		0.536
Pseudo R-Sq	0.2554		0.255		0.257	

Table 4

The Effects of the Host Country Environment on Payment Transparency

The table presents the results of a within-firm analysis of a firm's payment transparency choices across its host nations using Negative Binomial models and OLS. To identify the sources of within-firm variation in transparency choices, the models in this table include firm-year fixed-effects. The dependent variable, *Payment Transparency,* is the sum of two indicator variables that measure whether a firm discloses (i) profit taxes and (ii) royalty payments made to the government in a specific host country. Independent variables are defined as follows. *Host Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the host country. We invert the index by taking the difference between ten (its maximum value) and the index. *Host Country Enforcement* is measured by the average number of prosecutions for corruption in the host country in two years before the year of disclosure, normalize by the share each country has of world exports. *Host Country Number of Firms* is the natural logarithm of the number of oil and gas companies operating in the host country. *Host Country Nationalizations* is the number of times the host country's government has nationalized the local operations of oil and gas companies in the past, as recorded by Guriev, Loiotilin, and Sonin (2009). Robust standard errors, adjusted for clustering within firms, are in parentheses. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level).

	Payment Transparency					
	Negative Binomial	OLS	Negative Binomial	OLS	Negative Binomial	OLS
	(1)	(2)	(3)	(4)	(5)	(6)
Host Country Corruption	0.00561	-0.0011			0.0104	-0.0004
	(0.0179)	(0.00505)			(0.0250)	(0.0059)
Host Country Enforcement	-0.0182	-0.0134	-0.0496	-0.0160	-0.0292	-0.0172
	(0.240)	(0.0688)	(0.216)	(0.0573)	(0.230)	(0.0614)
Host Country Number of Firms	0.2440	0.0385+	0.236	0.0397+	0.2520	0.0394+
	(0.158)	(0.0221)	(0.152)	(0.0226)	(0.159)	(0.0221)
Host Country Nationalizations			-0.00441	-0.00189	-0.00874	-0.0018
			(0.0169)	(0.00515)	(0.0232)	(0.0059)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-15.69**	-0.0598	-19.37**	-0.0675+	-16.48**	-0.0641
	(1.075)	(0.0499)	(1.055)	(0.0395)	(1.084)	(0.0535)
Alpha	3.40E-08		3.27E-07		1.47E-08	
N	461	461	461	461	461	461
Adjusted R-Sq		0.698		0.698		0.697
Pseudo R-Sq	0.4566		0.4997		0.457	

Table 5

The Effects of the Host Country Environment on Performance Transparency

The table presents the results of a within-firm analysis of a firm's performance transparency choices across its host nations using Negative Binomial models and OLS. To identify the sources of within-firm variation in transparency choices, the models in this table include firm-year fixed-effects. The dependent variable, *Performance Transparency,* is the sum of six indicators variables that take the value of one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) production volumes, and (vi) reserves, respectively. *Host Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the host country. We invert the index by taking the difference between ten (its maximum value) and the index. *Host Country Enforcement* is measured by the average number of prosecutions for corruption in the host country in two years before the year of disclosure, normalize by the share each country has of world exports. *Host Country Number of Firms* is the natural logarithm of the number of oil and gas companies operating in the host country. *Host Country Nationalizations* is the number of times the host country's government has nationalized the local operations of oil and gas companies in the past, as recorded by Guriev, Loiotilin, and Sonin (2009). Robust standard errors, adjusted for clustering within firms, are in parentheses. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level).

| | Performance Transparency | | | | | |
	Negative Binomial	OLS	Negative Binomial	OLS	Negative Binomial	OLS
	(1)	(2)	(3)	(4)	(5)	(6)
Host Country Corruption	-0.0522**	-0.0807**			-0.0397*	-0.0627*
	(0.0163)	(0.0271)			(0.0179)	(0.0273)
Host Country Enforcement	0.0787	0.476	0.0876	0.543	0.00716	0.367
	(0.178)	(0.509)	(0.171)	(0.468)	(0.170)	(0.486)
Host Country Number of Firms	0.190*	0.219*	0.242**	0.290*	0.203*	0.245*
	(0.0790)	(0.103)	(0.0772)	(0.107)	(0.0792)	(0.107)
Host Country Nationalizations			-0.0441**	-0.0693**	-0.0297*	-0.0507*
			(0.0136)	(0.0220)	(0.0135)	(0.0209)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0294	1.186**	-0.399**	0.562**	-0.0562	1.064**
	(0.176)	(0.233)	(0.140)	(0.173)	(0.196)	(0.251)
Alpha	6.44E-08		4.25E-08		5.24E-08	
N	461	461	461	461	461	461
Adjusted R-Sq		0.476		0.474		0.481
Pseudo R-Sq	0.236		0.235		0.245	

Table 6

The Relation between Transparency and Host Country Environment for Firms with Above and Below Median Anti-Corruption Efforts

The table presents the results of within-firm analyses of a firm's different transparency choices separately for those firms with above-median (Panel A) and below-median (Panel B) measures of anti-corruption practices (*Anti-Corruption Measures*) using Negative-Binomial models. To identify the sources of within-firm variation in transparency choices, the models in this table include firm-year fixed-effects. *Transparency*, is calculated by summing eight indicator variables, each taking the value one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. *Host Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the host country. We invert the index by taking the difference between ten (its maximum value) and the index. *Host Country Enforcement* is measured by the average number of prosecutions for corruption in the host country in two years before the year of disclosure, normalize by the share each country has of world exports. *Host Country Number of Firms* is the natural logarithm of the number of oil and gas companies operating in the host country. *Host Country Nationalizations* is the number of times the host country's government has nationalized the local operations of oil and gas companies in the past, as recorded by Guriev, Loiotilin, and Sonin (2009).The anti-corruption measure used to split the overall sample into two panels, *Anti-corruption Measures,* is an index constructed from 16 measures (see footnote 7), reflecting the transparency of a firm about its anti-corruption systems. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level). † Negative binomial estimates unavailable, Poisson estimates used instead.

	Transparency				Payment Transparency			Performance Transparency	
Panel A: Firms with above median anti-corruption efforts									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Host Country Corruption	-0.0396*		-0.0238	0.0162		0.0318	-0.0491**		-0.0329+
	(0.0176)		(0.0190)	(0.0219)		(0.0328)	(0.0175)		(0.0184)
Host Country Enforcement	0.0583	0.0222	-0.0190	-0.0306	-0.113	-0.102	0.0479	0.0288	-0.0345
	(0.191)	(0.173)	(0.180)	(0.354)	(0.313)	(0.305)	(0.201)	(0.194)	(0.196)
Host Country Number of Firms	0.266*	0.308*	0.281*	0.277	0.242	0.299	0.272*	0.320**	0.285**
	(0.130)	(0.121)	(0.122)	(0.267)	(0.258)	(0.257)	(0.114)	(0.103)	(0.106)
Host Country Nationalizations		-0.0460*	-0.0368*		-0.0160	-0.0293		-0.0519**	-0.0394*
		(0.0179)	(0.0185)		(0.0237)	(0.0343)		(0.0180)	(0.0177)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.199	-0.523*	-0.308	-16.02**	-14.85**	-15.13**	-0.141	-0.541**	-0.249

(0.255)	(0.228)	(0.251)	(1.179)	(1.142)	(1.179)	(0.231)	(0.193)	(0.228)
N								
219	219	219	219	219	219	219	219	219
Pseudo R-Sq								
0.159	0.161	0.162	0.406	0.406	0.407	0.135	0.136	0.139

Panel B: Firms with below median anti-corruption efforts								
	(10)	(11)	(12)	(13)†	(14)†	(15)	(16)	(17)	(18)†
Host Country Corruption	-0.0492 (0.0324)		-0.0460 (0.0371)	-0.0113 (0.0376)		-0.0281 (0.0533)	-0.0565 (0.0344)		-0.0511 (0.0385)
Host Country Enforcement	0.0299 (0.223)	0.146 (0.150)	0.0106 (0.191)	-0.0703 (0.340)	0.0181 (0.318)	-0.147 (0.413)	0.0927 (0.218)	0.165 (0.150)	0.0450 (0.186)
Host Country Number of Firms	0.117 (0.0833)	0.162+ (0.0880)	0.121 (0.0917)	0.214 (0.179)	0.221 (0.179)	0.178 (0.214)	0.0997 (0.0809)	0.149+ (0.0899)	0.106 (0.0887)
Host Country Nationalizations		-0.0227 (0.0154)	-0.0071 (0.0180)		0.0138 (0.0302)	0.0259 (0.0423)		-0.0296+ (0.0156)	-0.0127 (0.0171)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.386** (0.381)	1.057** (0.209)	1.400** (0.353)	-20.52** (1.207)	-20.69** (1.135)	-17.28** (1.271)	1.432** (0.361)	1.104** (0.199)	1.465** (0.327)
N	242	242	242	242	242	242	242	242	242
Pseudo R-Sq	0.335	0.333	0.335	0.547	0.547	0.513	0.317	0.314	0.324

Table 7

The Relation between Transparency and Host Country Environment for Firms with Above and Below Median Size

The table presents the results of within-firm analyses of a firm's different transparency choices separately for those firms with above-median (Panel A) and below-median (Panel B) firm size using Negative-Binomial models. To identify the sources of within-firm variation in transparency choices, the models in this table include firm-year fixed-effects. *Transparency* is calculated by summing eight indicator variables, each taking the value one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. *Payment Transparency* is the sum of two indicator variables that measure whether a firm discloses (i) profit taxes and (ii) royalty payments made to the government in a specific host country. *Performance Transparency* is the sum of six indicators variables that take the value of one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) production volumes, and (vi) reserves, respectively. *Host Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the host country. We invert the index by taking the difference between ten (its maximum value) and the index. *Host Country Enforcement* is measured by the average number of prosecutions for corruption in the host country in two years before the year of disclosure, normalize by the share each country has of world exports. *Host Country Number of Firms* is the natural logarithm of the number of oil and gas companies operating in the host country. *Host Country Nationalizations* is the number of times the host country's government has nationalized the local operations of oil and gas companies in the past, as recorded by Guriev, Loiotilin, and Sonin (2009). The firm size measure used to split the overall sample into two panels is derived from approximate revenue figures that were available for each firm. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level).

	Transparency			Payment Transparency			Performance Transparency		
	Panel A: Firms with above median size								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Host Country Corruption	-0.0499**		-0.0400*	0.0300		0.0212	-0.0599**		-0.0475*
	(0.0189)		(0.0188)	(0.0268)		(0.0364)	(0.0194)		(0.0198)
Host Country Enforcement	0.145	0.229	0.118	-17.65**	-16.92**	-16.98**	0.163	0.261	0.127
	(0.236)	(0.209)	(0.233)	(0.830)	(0.798)	(0.819)	(0.248)	(0.225)	(0.246)
Host Country Number of Firms	0.196+	0.235*	0.202+	0.420	0.386	0.415	0.179+	0.225*	0.187+
	(0.113)	(0.109)	(0.111)	(0.329)	(0.337)	(0.330)	(0.101)	(0.0965)	(0.0988)
Host Country Nationalizations		-0.0392+	-0.0255		0.0251	0.0176		-0.0493*	-0.0332+
		(0.0201)	(0.0185)		(0.0287)	(0.0360)		(0.0203)	(0.0183)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0358	-0.270	0.0128	-2.996**	-2.792**	-2.967**	-0.00590	-0.364*	-0.0328

	(0.248)	(0.210)	(0.246)	(0.749)	(0.754)	(0.746)	(0.224)	(0.179)	(0.223)
Alpha	2.40E-30	5.72E-18	1.50E-20	3.20E-43	4.93E-08	4.80E-08	1.82E-19	9.79E-14	2.69E-88
N	335	335	335	335	335	335	335	335	335
Pseudo R-Sq	0.199	0.197	0.211	0.417	0.340	0.340	0.190	0.188	0.192

Panel B: Firms with below median size

	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Host Country Corruption	-0.0298		-0.0104	-0.0190		0.00194	-0.0329		-0.0132
	(0.0248)		(0.0377)	(0.0245)		(0.0342)	(0.0278)		(0.0413)
Host Country Enforcement	0.0232	-0.0891	-0.0961	0.102	0.0645	0.0684	-0.00760	-0.150	-0.154
	(0.237)	(0.190)	(0.181)	(0.198)	(0.152)	(0.172)	(0.262)	(0.220)	(0.214)
Host Country Number of Firms	0.200+	0.251*	0.235+	0.124	0.159	0.162	0.226	0.283*	0.262+
	(0.116)	(0.115)	(0.139)	(0.132)	(0.130)	(0.161)	(0.126)	(0.133)	(0.150)
Host Country Nationalizations		-0.0393*	-0.0345		-0.0355	-0.0364		-0.0415**	-0.0354
		(0.0156)	(0.0278)		(0.0329)	(0.0406)		(0.0161)	(0.0296)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.147	-0.420*	-0.320	-15.54**	-17.34**	-16.71**	-0.171	-0.478+	-0.350
	(0.307)	(0.212)	(0.448)	(1.078)	(1.052)	(1.131)	(0.315)	(0.245)	(0.471)
Alpha	4.66E-08	2.59E-08	1.12E-08	1.59E-63	1.47E-15	1.92E-14	5.85E-08	4.16E-09	2.75E-32
N	126	126	126	126	126	126	126	126	126
Pseudo R-Sq	0.328	0.330	0.330	0.545	0.546	0.546	0.300	0.302	0.302

Table 8
Relation between Transparency and Home Country Environment

The table presents the results of a within-host nation analysis of firms' transparency choices using a Negative Binomial model OLS. To identify the sources of within-host country variation in transparency choices, the models in this table include host country-year fixed-effects. The dependent variable, *Transparency* is calculated by summing eight indicator variables, each taking the value one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. Independent variables are defined as follows. *Home Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for a firm's home country. We invert the index by taking the difference between ten (its maximum value) and the index. *Home Country Enforcement* is measured by the average number of prosecutions for corruption in the home country in two years before the year of disclosure, deflated by the home country's share of world exports. *Firm FCPA* is an indicator for whether a firm has been fined for violating the Foreign Corrupt Practices Act (FCPA). *Firm Size* is measured by allocating firms into quartiles depending on approximate revenue figures that were available. *Anti-Corruption Measures* is an index constructed from 16 measures (see footnote 7), reflecting the transparency of a firm about its anti-corruption systems. *NOC*, *LNOC*, and *SUBLNOC* are indicators for whether the firm is a national oil company that is completely controlled by the government, a national oil company that is listed in a stock exchange, or a national oil company with a subsidiary listed in a stock exchange, respectively. Robust standard errors, adjusted for clustering within firms, are in parentheses. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level).

	Negative Binomial		OLS	
Home Country Corruption	-0.0391		-0.103	
	(0.0754)		(0.164)	
Home Country Enforcement	-0.320		-0.758	
	(0.211)		(0.541)	
Firm FCPA	0.170		0.279	
	(0.201)		(0.325)	
NOC	-0.747	*	-0.727	
	(0.368)		(0.594)	
LNOC	-0.184		-0.396	
	(0.291)		(0.630)	
SUBLNOC	-1.437	**	-1.058	+
	(0.523)		(0.581)	
Anti-Corruption Measures	0.0206		0.0315	
	(0.0340)		(0.0632)	
Firm Size (quintile 2)	-0.0866		-0.266	
	(0.219)		(0.611)	
Firm Size (quintile 3)	-0.282		-0.528	
	(0.282)		(0.561)	
Firm Size (quintile 4)	-0.737	**	-1.405	*
	(0.250)		(0.626)	

Firm Size (quintile 5)	-0.793	**	-1.520	*
	(0.283)		(0.676)	
Host-Year FE	Yes		Yes	
Constant	0.959		3.021	+
	(0.743)		(1.704)	
Alpha	2.20E-02			
N	461		461	
Adjusted R-Sq			0.232	
Pseudo R-Sq	0.165			

Table 9

The Effects of the Home Country Environment on Payment and Performance Transparency

The table presents the results of within-host nation analyses of firms' *Payment Transparency* and *Performance Transparency* choices using a Negative Binomial model and OLS. To identify the sources of within-host country variation in transparency choices, the models in this table include host country-year fixed-effects. The dependent variables are *Payment Transparency* and *Performance Transparency*. *Payment Transparency* is calculated by summing two indicator variables, each taking the value one if a company discloses for a specific home country its (i) profit taxes and (ii) royalties. Independent variables are defined as follows. *Performance Transparency* is the sum of six indicators variables that take the value of one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) production volumes, and (vi) reserves, respectively. *Home Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for a firm's home country. We invert the index by taking the difference between ten (its maximum value) and the index. *Home Country Enforcement* is measured by the average number of prosecutions for corruption in the home country in two years before the year of disclosure, deflated by the home country's share of world exports. *Firm FCPA* is an indicator for whether a firm has been fined for violating the Foreign Corrupt Practices Act (FCPA). *Firm Size* is measured by allocating firms into quartiles depending on approximate revenue figures that were available. *Anti-Corruption Measures* is an index constructed from 16 measures (see footnote 7), reflecting the transparency of a firm about its anti-corruption systems. *NOC*, *LNOC*, and *SUBLNOC* are indicators for whether the firm is a national oil company that is completely controlled by the government, a national oil company that is listed in a stock exchange, or a national oil company with a subsidiary listed in a stock exchange, respectively. Robust standard errors, adjusted for clustering within firms, are in parentheses. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level).

	Payment Transparency		Performance Transparency	
	Poisson	OLS	Negative Binomial	OLS
	(1)	(2)	(3)	(4)
Home Country Corruption	-0.552 *	-0.137 +	0.0265	0.0345
	(0.256)	(0.0753)	(0.0691)	(0.116)
Home Country Enforcement	-1.131 +	-0.239	-0.255	-0.519
	(0.668)	(0.295)	(0.183)	(0.339)
Firm FCPA	0.191	0.101	0.132	0.178
	(0.720)	(0.166)	(0.184)	(0.242)
NOC	-12.62 **	0.195	-0.822 *	-0.922 *
	(1.419)	(0.261)	(0.337)	(0.452)
LNOC	0.629	0.169	-0.331	-0.565
	(0.655)	(0.294)	(0.290)	(0.467)
SUBLNOC	0.177	0.177	-1.569 **	-1.235 **
	(1.477)	(0.255)	(0.467)	(0.417)
Anti-Corruption Measures	0.0910	0.00927	0.0151	0.0223
	(0.0676)	(0.0250)	(0.0282)	(0.0430)
Firm Size (quintile 2)	-0.964 +	-0.244	0.00248	-0.0219
	(0.576)	(0.270)	(0.189)	(0.400)
Firm Size (quintile 3)	-0.751	-0.173	-0.221	-0.355

	(1)		(2)		(3)		(4)	
	(0.624)		(0.226)		(0.288)		(0.449)	
Firm Size (quintile 4)	-1.883	**	-0.472	+	-0.569	*	-0.932	*
	(0.648)		(0.248)		(0.244)		(0.454)	
Firm Size (quintile 5)	-2.715	**	-0.634	*	-0.533	*	-0.886	+
	(0.568)		(0.283)		(0.260)		(0.473)	
Host-Year FE	Yes		Yes		Yes		Yes	
Constant	-0.544		0.878		0.659		2.142	*
	(1.594)		(0.815)		(0.586)		(1.025)	
Alpha					2.52E-19			
N	461		461		461		461	
Adjusted R-Sq			0.185				0.229	
Pseudo R-Sq	0.381				0.161			

Table 10
Relation between Transparency in Home Country Reports and Home Country Environment

The table presents the results of an analysis of home country reports using a Negative Binomial model and OLS. The dependent variable, *Transparency* is calculated by summing eight indicator variables, each taking the value one if a company discloses for a specific host country its (i) revenues, (ii) production costs, (iii) development and exploration costs, (iv) profit before taxes, (v) profit taxes, (vi) royalties, (vii) production volumes, and (viii) reserves. Independent variables are defined as follows. *Home Country Corruption* is measured in the year before the disclosure year using Transparency International's corruption perception index for the firm's home country. We invert the index by taking the difference between ten (its maximum value) and the index. *Home Country Enforcement* is the average number of corruption prosecutions in the firm's home country in the two years before the year of disclosure deflated by the home country's share world exports. *Only Home Operation* is an indicator for whether the firm only has operations in its home country. *Firm FCPA* is an indicator for whether a firm has been fined for violating the Foreign Corrupt Practices Act (FCPA). *Firm Size* is measured by allocating firms into quartiles depending on approximate revenue figures that were available. *Anti-corruption Measures* is an index constructed from 16 measures (see footnote 7), reflecting the transparency of a firm about its anti-corruption systems. *NOC*, *LNOC*, and *SUBLNOC* are indicators for whether the firm is a national oil company that is completely controlled by the government, a national oil company that is listed in a stock exchange, or a national oil company with a subsidiary listed in a stock exchange, respectively. Robust standard errors are in parentheses. Significance levels are denoted by + (10% level), * (5% level), and ** (1% level).

	Negative Binomial (1)		OLS (2)	
Only Home Operation	0.318	*	1.234	*
	(0.144)		(0.549)	
Home Country Corruption	0.0593		0.308	+
	(0.0379)		(0.179)	
Home Country Enforcement	0.0998		0.268	
	(0.152)		(0.845)	
Firm FCPA	0.183		0.876	
	(0.123)		(0.619)	
NOC	-0.760	**	-3.113	*
	(0.286)		(1.392)	
LNOC	-0.0180		0.0664	
	(0.173)		(0.961)	
SUBLNOC	-0.195		-0.919	
	(0.231)		(1.268)	
Anti-Corruption Measures	0.0382	**	0.1950	**
	(0.0130)		(0.0687)	
Firm Size (quintile 2)	-0.205		-1.004	
	(0.135)		(0.749)	
Firm Size (quintile 3)	-0.142		-0.609	

	(0.143)		(0.712)	
Firm Size (quintile 4)	-0.135		-0.722	
	(0.138)		(0.783)	
Firm Size (quintile 5)	-0.403	**	-1.684	*
	(0.148)		(0.642)	
Host-Year FE	Yes		Yes	
Constant	1.288	**	3.584	*
	(0.283)		(1.457)	
Alpha	2.35E-12			
N	73		73	
Adjusted R-Sq			0.435	
Pseudo R-Sq	0.142			